

FIG.3

RGB(ORIGINAL IMAGE) FORWARD TRANSFORMATION OF COLOR SPACE HAVING MINIMUM ERROR(RGB-YCbCr) YCbCr(STABLE VALUE FOR COLOR CONVERSION) **EMBODY WATERMARK** BACKWARD TRANSFORMATION OF COLOR SPACE HAVING MINIMUM ERROR(RGB←YCbCr) R'G'B'(STABLE VALUE FOR COLOR CONVERSION) RESTORE AT APPROXIMATELY ±2 LOWER THAN ORIGINAL RGB VALUE BECAUSE OF VALUE CONVERTED AT MINIMUM ERROR PARTIAL CHANGE(R'G'B') · · · · FOR EXAMPLE, CHANGE BY MANIPULATION •••FORWARD TRANSFORMATION OF COLOR SPACE HAVING MINIMUM ERROR(RGBY→CbCr)

YCbCr(RESTORE STABLE VALUE: NO ERROR EXCEPT FOR PARTIAL CHANGE OF R'G'B')

----BOTH INFORMATION IN ABOVE (a) AND (b) ARE RESTORED

139 139 139 112.2879 122.9168 138.8421 <u>-</u>ရှ <u>-</u>9 RESTORE 123 123 123 FLOATING POINT OPERATION -ပ် . ပ FIXED POINT OPERATION 112 112 112 > <u>></u> 134 103.7977 | 111.5352 | 133.9835 103.7977 111.5352 133.9835 103.7977 111.5352 133.9835 ā à 112 FLOATING POINT හ Ö FIXED POINT OPERATION OPERATION 104 'n 'n 139 DEVELOP RESULTS OF AUTOMATIC CONVERSION TO RIGHT WHEN INPUT VALUE FROM 0 TO 255 139 112.2879 122.9168 138.8421 112.2879|122.9168|138.8421 ප පි 123 123 င် ပ် [ANALOG TYPE COLOR CONVERSION] 112 > > [ORIGINAL DATA] 134 ø 112 G 104 ~

FIG.5
[DIGITAL TYPE COLOR CONVERSION USING ITU-R BT.601]

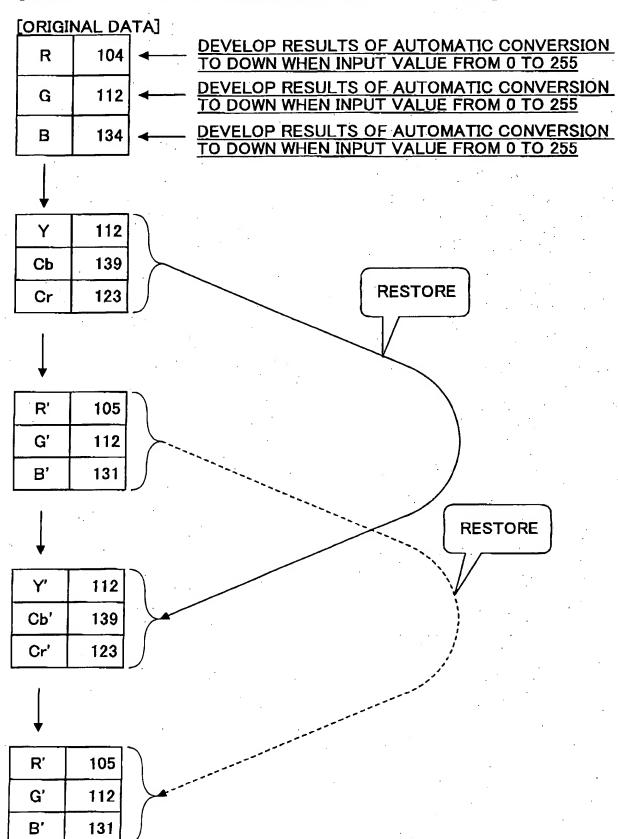


FIG.6 [REVERSIBLE TRANSFORMATION OF Y/Cb/Cr \rightarrow R/G/B FOR MLC]

